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A new species of *Lylea* (hyphomycetes) on *Rhopalostylis* (*Arecaceae*) in New Zealand

Eric H.C. McKenzie

mckenziee@landcareresearch.co.nz
Landcare Research, Private Bag 92170, Auckland, New Zealand

Abstract—*Lylea rhopalostylidis* sp. nov., found on dead leaves of *Rhopalostylis sapida* in New Zealand, is illustrated and described and compared with related taxa.

Key words—anamorphic fungi, deuteromycetes, taxonomy

Introduction

The palm genus *Rhopalostylis* contains only two taxa: *R. baueri* (endemic to Norfolk Island and to Raoul Island, Kermadec Islands) and *R. sapida* (endemic to mainland New Zealand). Recently, while examining a dead leaf of *R. sapida* for saprobic fungi, a species of *Lylea* was found. It is morphologically distinct from any of the previously described species and is described below as a new species.

Materials and methods

Portions of leaf sheath from dead, fallen fronds of the endemic nikau palm (*Rhopalostylis sapida* H. Wendl. & Drude) were collected from a coastal grove. The plant material was incubated under humid conditions and periodically examined for sporulating microfungi. Fungal fruiting structures were removed, mounted in lactophenol, and examined by light microscopy. Measurements were made on material mounted in lactophenol. A dried herbarium specimen of the new fungus was prepared and is deposited in the New Zealand Fungal Herbarium (Herb. PDD). The species is known only from the holotype.

Taxonomy

The genus *Lylea* Morgan-Jones was described by Morgan-Jones (1975), for a single species, *L. catenulata* Morgan-Jones. Since then only two species have been added to the genus (Holubová-Jechová 1978, Mercado-Sierra et al. 1997). The

genus is characterised by the formation of catenate conidia from monoblastic conidiogenous cells. The conidia are usually cylindrical, or fusiform. They are distoseptate, a feature that separates the genus from euseptate genera such as *Heteroconium*, *Septonema*, and *Taeniolella*. Mercado-Sierra et al. (1997) provided a key to the species of *Lylea*.

A specimen collected on *Rhopalostylis sapida* in New Zealand is distinct from all other known species, and is described here.

Lylea rhopalostylidis McKenzie, **sp. nov.** FIG. 1

MYCOBANK: MB 512736

Coloniae pilosae. Mycelium ex hyphis in substrato externum et immersum, ramosis, septatis, laevibus, brunneis vel pallide brunneis, tenuitunicatis, 2.5–4 µm crassis compositum. Conidiophora macronematosa, mononematosa, solitaria, erecta, recta vel paulo flexuosa, nonramosa, laevia, 4–7-septata, brunnea, usque ad 90 µm longa, 4.5–6 µm lata, crassitunicata. Cellulae conidiogenae monoblasticae, in conidiophora incorporatae, terminales, determinatae, cylindricae, 5.5–15 µm longa. Conidia catenata, sicca, acrogena, brunnea, laevia, recta vel curvata, cylindrica vel obclavata, basi truncata, apice late rotundato, (2–)4–6(–10)-distoseptatis, constricta vel non constricta, (16.5–)30–45(–75) × 5.5–9(–10) µm.

ETYMOLOGY: named after the host substrate, *Rhopalostylis*.

TYPE: NEW ZEALAND, Auckland, Piha, North Piha Beach, start of White Track, 36° 56.50206'S, 174° 28.03919'E, in foliis mortuis arecacearum *Rhopalostylis sapida* (*Arecaceae*), 27 October 2008, E.H.C. McKenzie, A. McKenzie (PDD 95060, **holotype**).

COLONIES in the form of scattered conidiophores. MYCELIUM superficial and immersed in the substratum. HYPHAE branched, septate, smooth, brown or pale brown, thick-walled, 2.5–4 µm diam. CONIDIOPHORES differentiated, mononematous, single, erect, straight or slightly flexuous, unbranched, smooth, 4–7-septate, brown, up to 90 µm long, 4.5–6 µm wide, thick-walled. CONIDIOGENOUS CELLS monoblastic, integrated, terminal, determinate, cylindrical, 5.5–15 µm long. CONIDIA in unbranched, acropetal chains, which separate readily, dry, acrogenous, brown, smooth, straight or curved, cylindrical or obclavate, base truncate, apex broadly rounded, (2–)4–6(–10)-distoseptate, often slightly constricted at one or more septa, (16.5–)30–45(–75) × 5.5–9(–10) µm (mean = 37.7 × 7.8 µm, n = 50). Mean of 2-septate conidia = 18.6 µm; 3-septate = 21.9 µm; 4-septate = 28.1 µm; 5-septate = 34.5 µm; 6-septate = 40.9 µm; 7-septate = 32.9 µm; 8-septate = 52.0 µm; 9-septate = 58.4 µm; 10-septate = 67.3 µm.

COMMENTS: The conidia of *Lylea rhopalostylidis* are morphologically similar to those of *L. catenulata* although those of the latter are somewhat longer ((18–) 40–67(–120) µm) and are usually formed in branched chains (Morgan-Jones 1975). *L. catenulata* has cylindrical conidia with a smooth outline, rather than sometimes being constricted at the septa as in *L. rhopalostylidis*. The conidia of

FIG. 1. Conidia and conidiogenous cells of *Lylea rhopalostylidis* (from holotype). Specimen mounted in hydrous lactophenol. Scale bar = 20 µm.

L. catenulata are rounded at both ends whereas those of *L. rhopalostylidis* are rounded at the apical end but usually truncate at the base. The conidiophores of *L. catenulata* are micronematous or semi-macronematous, being formed as "very short, erect, cylindrical branches of the superficial mycelium" (Morgan-Jones 1975); those of *L. rhopalostylidis* are distinct and long. Both of the other species, *L. palmicola* Mercado et al. and *L. tetracoila* (Corda) Hol.-Jech., produce conidia that are usually only 3-septate and are truncate at each end. The conidia of *L. palmicola* are much smaller (6–18 × 2.5–4 µm, Mercado-Sierra 1997) than those of *L. rhopalostylidis*, while the conidia of *L. tetracoila* are generally a little longer and narrower, and are often fusiform.

Lylea rhopalostylidis is a saprobe on dead leaves of *Rhopalostylis sapida*. *L. palmicola* is known only on dead leaves of palms in Cuba and Mexico (Mercado-Sierra et al. 1997). *L. catenulata* was described as a saprobe on bark of dead twigs of *Pinus taeda* in USA (Morgan-Jones 1975). *L. tetracoila* (syn. *Heteroconium tetracoilum* (Corda) M.B. Ellis) is saprobic on rotten bark and wood of various trees including *Betula*, *Fagus*, *Fraxinus*, *Populus*, and *Quercus* and is also commonly found growing on or near old fructifications of

diatrypaceous fungi (Ellis 1976, Holubová-Jechová 1978). It has been recorded in Europe and North America (Ellis 1976).

A large number of fungi have been recorded from palms — especially the larger, woody palms — including approximately 400 species of hyphomycetes for which palm tissue is the type substrate (Taylor & Hyde 2003). McKenzie et al. (2004) noted that 147 named species of fungi and 50 species identified only to genus have been recorded on *Rhopalostylis* (mainly *R. sapida*) in New Zealand. Nine species of anamorphic fungi have been described with *R. sapida* as the type substrate and four of these are, so far, restricted to *R. sapida* (McKenzie et al. 2004, Braun et al. 2006).

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